

## Global Analysis and Forecasts by Doping Material, Wavelength and Applications



## Introduction:

Laser diodes owing to a number of advantageous features offered by them, are rapidly becoming a vital part of modern technology and are being utilized in various applications. Laser marking tool is a reliable technology offering easy assistance and better efficiency. There are several laser marking options available in the market with different specifications and uses. Before the laser technology was introduced, there were several other printing methods in vogue such as acid etching chemicals and ink. However, these technologies do not suit the ever-increasing array of designs and materials nowadays. These traditional marking and engraving methods are now considered to be useless or are prohibited by the government due to their harmful after effects. Thus, new government policies and regulations to dispose traditional markings and replacing them with environment friendly and cleaner laser technology are expected to boost the global market.

The global market is classified by doping materials into GaN, AlGaInP, InGaN, GaAlAs and other doping materials (GaAs and GaInAsSb). This report is further classified on the basis of wavelength into red laser diode, blue, IR, blue-violet and others (green and UV ). Lastly, the global market is segmented on the basis of applications into consumer electronics, automotive, military & defense, healthcare and other applications (industrial, instrumentation & sensors, etc.).

Some of the key factors driving the global market include growing awareness about laser diode and its uses, growing fiber laser market, and remarkable research in the VCSEL market. Significant rise in the use of laser diodes in various end-use markets due to a number of advantageous features provided by laser technology in-comparison to traditional methods is a major factor driving this market. Moreover, the rapid growth in automotive industries and electronic manufacturing across the world is bolstering the global market. However, the major hindrance to this market include lack of R&D funding for the military segment coupled-with high initial costs required to manufacture laser diodes. However, projection applications provided by green laser diode devices are analyzed to create several opportunities for growth in this market during the near future.

Laser diodes are also used in surgeries due to their features which include a diverse range of operating wavelengths. Furthermore, it can also be modulated directly by using frequencies up to GHz range in high-speed communications. Thus, there is no delay in the input of operating surgeon and output of laser radiation. In addition, these are easily adjustable in terms of power output from 0% to 100%, thereby providing flexibility in the dosage of laser output. On the other hand, solid state lasers have restrictive adjustable power output ranging from 60% to 100%. This feature makes laser diodes the perfect tool for medical and healthcare applications. Thus, the expansion of electronics and healthcare industries complements the growth of the market owing to the substantial utilization of laser diodes across various applications in these industries.

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## The List of Companies

- ASML Holding NV
- Axcel Photonics, Inc.
- Coherent Inc.
- IPG Photonics Corp.
- Newport Corp.
- RoFin-Sinar Technologies Inc.
- Sharp Corporation
- Sumitomo Electric Industries, Ltd.
- Trumpf GmbH + Co. KG
- Panasonic Semiconductor Solutions Co., Ltd

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**Thank You**